Rotating Extension Article
By: Daniel E. Mullins
IFAS Extension Commercial Horticulture Agent
Santa Rosa County

Plant Potting Material of the Future Made From Whole Pine Trees

Pine bark and peat moss have been excellent ingredients in nursery potting mixtures over the past 30 years. Unfortunately, the days of seemingly unlimited supplies of these products are apparently over.

Pine bark, a once an abundant, reasonably priced by-product has become expensive, less readily available and more costly to transport. Also, the environmental concerns of mining peat moss, a non-renewable resource, as well as increasing transportation costs from Canada and other locations, could limit its use.

Researchers in the Department of Horticulture at Virginia Tech, headed up by Dr. Robert Wright, are using whole pine trees, grinding them up and making a new container substrate. Word of this potential alternative product is spreading rapidly in the industry and it is becoming known as pine tree substrate (PTS). Results from Dr. Wright's research demonstrate the product's feasibility for growing nursery and greenhouse crops.

To create the substrate, whole loblolly pine trees were chipped, and then further ground to predetermined particle sizes designed to meet specific plant growth requirements. Calculations based upon the cost of pine chips at five to six dollars per cubic yard make it conceivable to produce a nursery substrate for less than $15 per yard, compared to over $40 per yard for some standard peat based products.

Obviously, making a potting mixture from whole pines is more complicated than just grinding up some trees. A hammer mill is used to break the chips down to smaller sizes and screens are used to help size the particles to rigid specifications. Depending upon plant genera to be grown, the material is also amended with lime, slow release fertilizer and a micronutrient formulation prior to potting.

Research continues on this new product. So far, 51 different genera of plants have been successfully produced in PTS by Dr. Wright and his team. These include woody plants, greenhouse crops and herbaceous perennials. In 2006, the USDA Agricultural Research Service in Poplarville, Mississippi conducted an experiment comparing PTS with pine bark in producing butterfly bush and rosemary plants. Following the experiment, it was concluded that whole tree substrates are a viable alternative to pine bark, especially when higher rates of nitrogen are used.

The product has been named Woodgro and a patent has been applied for. There is much interest among growers and commercial substrate producers. According to Dr. Wright, other advantages of a wood chip substrate include decentralization of the horticultural substrate industry and being able to locate the producers near where the trees are grown.

Professional nursery managers, garden center operators and gardeners who would like to follow the development of this new product can find information on the worldwide web. A search under the name “Woodgro” currently provides at least eight articles on the subject.

I just purchased seven large bags of potting mix and they contained major ingredients currently expected to be found such as pine bark, peat moss and perlite. The way that things are going, the next time that I need to pot up some plants I might buy and load up bags containing a whole pine tree!

For more information of if you have a question, call Dan Mullins, Extension Commercial Horticulture Agent, The University of Florida/IFAS-Santa Rosa County Extension, at 850-623-3868, between the hours of 8:00 am and 4:30 pm weekdays. Hearing-impaired individuals may call Santa Rosa County Emergency Management Service at 983-5373 (TDD).

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